20: Hart E-5 (1951) 1954 OA1 Philippines
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CHAPTER VII

SECURING AQUATIC PRODUCTS

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This chapter describes techniques by which the barriofolk secure aquatic products from creek, river and sea. Pelagic products have been mentioned by various writers as important in the rural diet; the study of the aquatic foods obtained from the rivers and creeks, however, has been neglected in the Philippines. The first part of this chapter describes the catching of "non-commercial" aquatic life from the Caticugan Creek and Siaton River--namely, snails, crabs, shrimp and fish. The latter half of the chapter is devoted to the commercial aspects of pelagic fishing, mainly the fish corral, other types of fish traps, nets, and fishermen's boats. This division is arbitrary; owners of commercial fish corrals consume part of their catch, and some barriofolk have traps merely to obtain fish for their own tables. However, the quantities of fish obtained with the fish corral are much greater than those obtained in any other manner; fish corrals are the "big business" of Siaton municipality.[1]

[1] Various charts are placed at the end of this chapter as a more convenient place, in case the reader wishes to consult them, than the appendix.

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Fresh-Water Snails

Fresh-water snails are gathered for food; their thin shells are processed to make lime for tilad ("fixings" for betel nut chewing). Table XXVII lists the snails gathered for food in the Siaton River.

TABLE XXVII

FRESH-WATER SNAILS GATHERED IN THE SIATON RIVER

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LOCAL NAME (SIATON)	SCIENTIFIC NAME	EXTENT OF COLLECTION
Alipunti (Alapunte)	Balanocochlis gians (V. D. Bush)	Infrequently
White-mouth Alipunti	Balanocochlis inermis Lesson	Infrequently
Bokgay (White-mouth Ungka)	Neritina pulligera (Linn.) and Neritina squaminiota (Recluz)	Infrequently
Boong-Boong	Thiara cancellata (Roding)	Infrequently
Kapis	Septaria porcellana (Linn.)	FREQUENTLY
Soso or Igalso	Genus Stenomelania, species crenulata (Deshayes); uniformis (Quoy and Gaimard); hastula (Lea); and tiroumi (Deshayes)	Infrequently
Tibo-Tibo	Tarebia granifera (Lamarck)	FREQUENTLY
Ungka (Red-mouth)	Clithon bicolor (Recluz)	FREQUENTLY

Dr. James P. E. Morrison, Associate Curator, Division of Molluska, Smithsonian Institution, writes regarding the species covered by the words used by the barriofolk:

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> As you will note, the mixture of species under two of the common names are mixtures of what we understand as biological species in the same genus; in other words, the people, in identifying these snails by common names, are pretty closely following the lines of their biological relationships. In the case of the 'Bokgay', the two species of Neritina are very closely related. Again, in the case of the snails called 'Soso', the four species mixed thereunder are very closely related.[2]

The most common snails in the Siaton River, and therefore those most frequently gathered, are the Red-Mouth Ungka, Kapia and Tibo-Tibo. The other less abundant types are collected when available. While most barriofolk insisted that Soso and Igalao were the same snail with different names, others said they were different--that the Soso was larger, blacker and had a different coloration around the orifice than the Igalao. The White-Mouth Ungka (Bokgay) was reported to be "most plentiful ~~when there are many stars~~ in the sky." Bokgay snails, rarely found in the vicinity of Caticugan, are more common in the Siaton River beyond Sandolot and Balanan, and "in mountain streams." Bong-Bong are uncommon in the river near Caticugan and disappear north of Sitio Lamtoc. One resident of Datag said when Bong-Bong are found in the Siaton River near his barrio it was a sign of a coming flood.

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[2]Personal communication to the writer from Dr. Morrison, August 6, 1951. Identification of these snails and other aquatic life was made possible through the courtesy of Dr. Morrison and Dr. Harold A. Rehder, Curator, Division of Mollusks, Smithsonian Institution.

226 Snails are gathered all year except when the river is flooded and too swift to collect them. Even during the rainy season, the snails are collected between floods. Another factor that discourages people from gathering snails during the rainy season is the appearance in the river of the poisonous golden-colored fish, lupo. When stepped on, this fish inflicts a painful wound.

226 462 Both sexes gather snails in the river, although it is done mostly by women and young children. As one female informant explained: "Women are easier to group together than men and in the evening the men like to drink guhang." Snails are collected in the day or at night by moonlight or a flashlight.

226 Kapia, Ungka and Bong-Bong are usually found on top of stones at night or under them during the day. The people explain that at night the snails come from under the stones to feed. Soso and Tibo-Tibo normally occur on the sandy river bottom. When snails are gathered during the day stones are turned over along the river edge where the water is shallow. The people wear a small bamboo container or carry a can in which to put the snails.

252 262 Snails are boiled, sometimes with vegetables, to make soup (sabao). The meat is then extracted from the shell and eaten. Most houses have a nearby kitchen midden of discarded snail and clam shells.

276 To make lime (apog) for betel nut chewing, snail shells are put in a half section of dry bamboo that is

placed on dry palm leaves. The other half of the bamboo, the "lid," is fitted on top and covered with more leaves. Then the leaves are fired. When the fire burns out, the burnt shells are carefully picked up lest they shatter and are put in a container of water. The water is then thoroughly stirred; after the lime has settled, the water is poured off. Some wash the burnt shells after firing and crush them without soaking in water. A bamboo container for carrying lime for betel nut chewing is called sugong; a container carved from carabao horn is called luka.

Marine Snails and Clams

Table XXVIII, Varieties of Marine Clams and Snails Gathered in Siaton, presents pertinent data regarding local names, scientific identification and frequency of catch of marine snails and clams. (See Pages 636 - 637.) These mollusks, a fairly frequent part of the diet of barriofolk, give both variety and flavor to their daily fare. Like the fresh-water snails, they may be boiled to make a weak soup, eaten as meat, or cooked with vegetables. In the northern barrios marine mollusks are rarely eaten owing to the distance from the sea. Whereas a few people gather marine mollusks all the year, the southwest monsoon's arrival makes it difficult for the sea becomes rough. Like the fres-water mollusks, the marine snails and clams are collected mainly during the dry season.

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Marine mollusks are gathered mainly by women and young girls; men and young boys infrequently participate. The mollusks are gathered at low tide usually during or just before a full moon; the women enjoy collecting snails and clams. They bathe, gossip, playfully splash water on friends while dipping coconut shells into the sand for the clams. The marine clams most frequently gathered are Kalaykay and Toway; the marine snails are Tabono and Tandaday.

At the July full moon I visited the seashore one afternoon. The most popular place to collect snails and clams is a rocky stretch of beach just east of the Siaton River mouth. About seventy individuals were hunting along the rocky beach; they were women or young girls and a very few elderly men. Ten were from Catiugan; others came from the poblacion, from Barrios Mantuyop, and from Sumalaring. Some dug in the sand for clams, and put them into a container or popped them into their mouths. When their mouths were full they walked to the beach and put these clams in a container. Some women dropped the clams into their blouse fronts.

The most abundant of all these marine snails and clams is the Kalaykay; about the size of a quarter. The Tandagay, said to be "very good eating," are often collected on rainy days when they stick to stones in shallow water.

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Barriofolk rarely go to the nipa swamps just to collect clams and snails. They usually combine this task with getting nipa leaves.

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task with getting nipa leaves. The largest clam found in these areas is the Toway; one pokes a bolo (brought to cut nipa leaves) or a stick into a soft mount or bubbling hole in the damp sand of the swamp to get Toways. Four types of snails that are found in nipa swamps are: Dalodalo, Hagonipa, Libodbod, and Taboysoy (the latter clings to the palm trunks and leaves).

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Two types of seaweed are gathered and eaten by the barriofolk: a green moss, lumot, and a brownish moss, lagot. Lagot is put in hot water, then drained and garlic, salt, and vinegar added. These two seaweeds are gathered during the dry season along the beach. When the rainy season begins the mosses "become slippery and are not good to eat." Only a few families in Catiougan were observed eating these mosses.

METHODS OF OBTAINING RIVER FISH

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A large share of the fish eaten locally is caught in the Siaton River. Many families eat more river fish than sea fish. They either lack money to buy sea fish or there may be none for sale in the marketplace.

Table XXIX[1] lists local names, and in most cases, scientific identification, of types of fish caught in the Siaton River.

River fish are caught in eight different ways: (1) with nets (te-an and tangkop); (2) with bamboo-rattan traps (sasag, balantak and bobo); (3) with fish poisons; (4) by the galobog method; (5) by a process called

1 [See p. 540, cat. 226 or 116 -- Analyst]

Panangkop; (6) by gamala ("drying the stream"); (7) with "fish guns" (pana sa isda); and (8) by hook and line and gaff (kao-it), and fish spears called togsad. These eight methods of obtaining fish from the Siaton River are described below. 226

TABLE XXIX

Varieties of Fish Caught in the Siaton River Negros Oriental 226 136

Local Names		Identification[4]
Siaton	Tanjay[3]	
Amapan	Palangan[5]	Mugilidae sp.[6]
Bais or Kawo-Kawo	Bais	Anguilla mauritiana Benn.
Bogsikan	-	-
Bulan-Bulan	-	-
Capasgapas	-	-
Gisao[7]	Gisao	Mugil dussumieri C. & V.
Halo-an[8]	-	-
Hilihol	Hilihol	Brachysomiophis (Achirophichthys) W. & P. Kampeni
Hipon[9]	-	-
Ilabo	Ilabo	Bunaka pinguis Herre.
Inid[10]	-	-
Kahoykahoy	Koikog	Belonichthys fluviatilis Peters
Labongan	-	-
Mambot or Tibiw	Tibiw	Sicyopterus lacrymosus Herre.
Mangat	-	-
Oga-ot[11]	-	-
Ontangol	-	-
Palangan[12]	-	Ambassis nalua (Ham. Buch.)
Pili[13]	-	-
Pigot	-	-
Subadsubad	-	Caranx malabaricus Bloch and Schneider
Toghod	Bonog[14]	Chonophorous ocellaris Brousonet
Tokotoko	Lagnas	Biat luzonicus Seale

[3]Prior to sending my Siaton collection to Manila a visiting fisherman from Tanjay (Negros Oriental) examined the preserved specimens and furnished the above local names. Some specimens were added after his visit to Siaton and others he did not recognize.

RIVER FISH NETS

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Three types of nets are used in river fishing; the ta-an, tangkop and salok. The salok is a butterfly-like net, infrequently seen, used to catch shrimp that cling to the muddy banks of the river during the rainy season. The tangkop net is used for panangkop to be described later. The ta-an is the net most widely used for Hipon. (See Plate XXIV.)

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[4]Identification was made with specimens preserved in a 70 per cent solution of alcohol through the cooperation of Dr. D. V. Villadolid, Director, I. Ronquillo and A. Sarenas, Bureau of Fisheries, Manila.

[5]The Anapan of Siaton is the Palangan of Tanjay. Palangan in Herre and Umali, op. cit., is said to be the "Slipmouth" (Family Leiognathidae) which is not the same fish identified as the Anapan or Palangan of Siaton.

[6]The Anapan specimen in the collection was a juvenile mullet. Differential characteristics of the different genera are not only difficult to see at such a stage but may overlap. Dr. Villadolid thinks possibly that the Anapan and Gisao may be the same fish.

[7]Gisao in Herre and Umali, op. cit., is called "Mullet Fingerling" (Family Mugilidae).

[8]Some Filipinos said the Halo-an is the "Mudfish" called Dalag (Tag.)

[9]Hipon are Family Gobiidae according to Herre and Umali, op. cit.

[10]Inid and Bulan-Bulan are also caught in the sea.

[11]Oga-oi is normally caught in river traps only during the rainy season.

[12]See Nos. 5 and 6.

[13]Pili, Lebongan and Bogaikan are usually found farther north than Catiougan "where the river is swifter and deeper."

[14]Bonog in Herre and Umali, op. cit., is "Goby" (Chonophorus melanocephalus or Glossogobius giurus.)

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(i.e., the last quarter of the moon, often seen in the sky at noon), several days after the "dying moon" (himatayon) and two or three days after the full moon (subang). During the full moon, however, only the "fine type" are said to be caught. Examination of the types of Hipon caught during these runs did not bear out this folk-statement. Others said that in years when mushrooms are scarce Hipon are most plentiful. During a Hipon run several hundred people, from the poblacion and the barrios, can be seen catching the fish in the river; Caticugan is almost deserted during these runs.

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Ta-an Nets

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Ta-an nets are placed in shallow water near the banks or on sand bars of the Siaton River. Usually low walls of stone and palm leaves are built to make a channel that leads the water into the net. The net, tied to stakes driven into the river bed, is usually four or five feet long and two or three feet wide. The net opening faces downstream since the Hipon swim upstream. Fish pass into the first section of the net, over the front flap that is weighted with stones or sticks. This flap is weighted so it is only partly submerged, not touching the net bottom, but tied by strings at a five or ten degree angle. (See Plate XXXV, Detail B.)[1] This makes it impossible for fish, once they swim over the flap and into the first section of the net, to escape. Eventually they swim from the first section through the two small openings (galao) into the second section of the net;

[1] [this plate (p. 544) is missing -- Analyst]

(see Plate XXXV, Detail A)[1] the catch is scooped out of this section. 227

Ta-an nets have the advantage of not having to be watched constantly; they are set up by men. Ta-an catches are for family consumption. One group that netted Hipon with a tangkop near the Siaton River mouth caught two cavans in an afternoon. Large catches usually are made near the mouth or just off the mouth of the river, with bigger nets; Hipon sell in the marketplace for about five dollars per five-gallon can. The owner of a big net receives one-half of the catch, and his assistants divide the remainder equally. Young girls or women vendors from Caticugan and other barrios go to the mouth of the rivers during Hipon runs to sell or barter boiled bananas and other foods. 226 [435] [265]

The Asag and Balantak River Fish Traps

Two common types of fish traps used in Siaton River are the balantak and the larger asag. Small bobo fish traps may be placed in the river but this type of trap usually is put in the sea. The largest asag seen, at Sitio Daliw (north of Casala-an), was 12 feet long. (See Plate XXXVI.) This asag, owned by one family, had stone retaining walls three to four feet high, several feet thick, and about 25 feet long. The walls ordinarily last until rainy season when they are washed away by the flooded river. Fish smaller than four or five inches could have passed 227

2 [See p. 546, Cat. 227 – Analyst]

1 [this plate (p. 544) is missing -- Analyst]

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Asags or balantaks are rarely used in the part of the Siaton River that runs past Talo-ot and Datag because of its depth, even during the dry season. The Mantuyop River, shallower and more rocky, is ideal for such traps. Many Naga barriofolk put either type of trap, especially balantak, in this river. Traps are checked several times a day to remove the catch or to clear away debris from the mouth of the channel or the trap. During the rainy season some asags remain in the river; a few are washed away.[16]

GAMALA

Gamala ("drying up the stream") is another method by which fish, shrimp and crabs are caught in the river. Along the Siaton River there are sandy flats--often created during the rainy season. Here small channels are dug, several inches deep, so water from the river flows through them. These artificial streams are called malad-om ("little streams that can be made dry.") Water flows through these channels for several weeks "so the fish and shrimp will get used to it." Sometimes a little grated coconut is sprinkled in the channels to attract shrimp and fish. Often coconut fronds are put along both edges of the channel to increase the shade that the fish and shrimp seem to prefer.

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[16] The Magahats have the balantak fish trap that is called bali-at. They bait their traps with roasted nuts or the entrails of birds, which is not done in Caticugan. Oracion, op. cit., pp. 76-7.

After several weeks the flow of water into these channels is stopped by blocking with stones, sand or a piece of old matting. At the channel's lower end a balantak trap is placed; the water runs out through the trap, catching most of the fish or shrimp. When all the water has run out, the people search the dry bed of the channel, to pick up stranded shrimp, fish and crabs. 226

One man in Talo-ot had been using the same malad-om channel for three years; any person may make a channel as long as they do not interfere with others. Sometimes an abaca net (also called balantak) is used in gamala but the balantak trap is much more common. During the rainy season it is impossible to use this method of catching fish; the sandy river flats are flooded with deep water.[17]

LOCAL PISCICIDES

The most common method of fish poisoning is to crush plant materials (roots, leaves, fruits, seeds or bark) and dump them into the water. Plant material may be soused in a container of water and this mixture poured into the place to be poisoned--a method best suited to plants of high toxicity. Plant poison may be ground, mixed with other materials (fish, worms, etc.) 226 278

[17]Capistrano describes a similar method of fishing in Mindanao that is called pamala. In pamala small pools are emptied by using large kerosene cans or bamboo dippers in order to get the fish in the pool, usually halo-an. Ramon J. Capistrano, "The Fishing Industry in Cagayan, Manila, 1915." Manila, Bisaya Ethnology, Beyer Collection, I-V, No. 110, 1918, p. 9. Typescript.

and made into small pellets of bait. Some people use inorganic chemical poisons like lime. The toxins in the plants vary; some are stomach poisons, others affect the functioning of the respiratory system through haemolysis of the red blood corpuscles. The plants most commonly used as piscicides contain toxins of saponins, alkaloids and glucosides. Most piscicides act fairly rapidly; the full effect is achieved normally within half an hour.[18]

Five different plants are known or used by the barriofolk of Caticugan as fish poisons for both river and pelagic fishing. These piscicides are: the vines lagtang (Anamirta cocculus (Linn.) W. & A.) and tubli (Derris elliptica (Roxb.) Benth.), a bush called soro-soro (Euphorbia neriifolia L.), the kasay tree bark and the fruit and bark of the bito-on (Barringtonia asiatica (Linn.) Kurz) tree. The most popular one is lagtang.

I never saw Caticugan barriofolk use fish poisons, although they were well-informed about the techniques. The Siaton River near Caticugan does not lend itself to such a method of fishing; it lacks small riverside pools and the current is fairly swift. In the northern barrios of the Siaton River valley the people utilize piscicides more frequently. There are more creeks, the river's current is gentler with many shallow pools.

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[18] Robert F. Heizer, "Aboriginal Fish Poisons," Anthropological Papers, No. 33-42, Bulletin 151, Bureau of American Ethnology, Washington, D.C., 1953, pp. 231-2, 239.

In the fishing barrios lagtang is used for certain types of pelagic fishing.[19] 226

When the fish corrals are destroyed by the south-west monsoon, the men in fishing communities like Malabuhan fish with hook and line when weather permits. They use lagtang as a piscicide, frequently to obtain live bait. Lagtang's fruit is red when ripe, the seeds are brown. The vine flowers in March and the fruits are collected in May. In Malabuhan the people often buy lagtang seeds for five cents a pound; lagtang does not grow near Malabuhan and has to be sought in the hills. Lagtang seeds contain picrotoxin, other bitter principles and two alkaloids. One of the best known of Asian piscicides, lagtang, is "one of the commonest [plants] used as a fish poison in the Philippines."[20] 226 278

The fruit of the lagtang is dried in the sun with care not to over-dry, since this is said to make the

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[19] Piscicides are still widely used in the Philippines. An author from Camiguin Island, off the northern coast of Mindanao, recently wrote: "Aside from fishing with TNT, more than a few fishermen in Camiguin still use poison herbs, including tubli and lagtang to kill fish. This practice is almost as destructive as dynamite fishing itself." Rafael A. Bautista, "Disappearing Paradise," The Philippines Free Press, XLIV, No. 8 (February 21, 1953), pp. 20-1. Dynamite fishing became a serious problem after the last war that left large supplies of explosives in various parts of the Philippines.

[20] Brown states "The fruit is used as a fish poison and is also poisonous to other animals...In preparing the poison the fruit is heated until dry and then crushed and powdered." Brown, op. cit., I, p. 530. Encarnacion wrote that the juice obtained from the lagtang roots, mixed with water, was used as a medicine for sore eyes and the fruit was used as a piscicide. Quisumbing, op. cit., pp. 145-6.

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seeds very toxic. Once dried, the outer skin is peeled off and the seeds are roasted in a frying pan. Lagtang seeds must not be heated too long or they become so toxic that the fish sink instead of floundering stupefied on the surface. Then the seeds are pounded and mixed with finely-cut fish, cooked cornmeal or mashed land crabs and sand; sand makes the mixture heavy so it will sink. When the fish eat this mixture they "come to the surface very dizzy and act crazy and we scoop them up with the sikpas"—a butterfly-like net with a handle. Since all the fish do not come to the surface this type of fishing is wasteful, particularly if the poison is very potent.

Tubli is another common piscicide. Wray's description of the use of tubli by the Malays approximates the technique used in the Philippines—and in Caticugan.[21] The stem and roots of this vine are cut, sometimes mashed, then placed in water to soak out the toxin. Tubli is used in the river and in rocky pools along the seashore. The lack of such pools between Malabuhan and the Siaton River mouth may be one reason why tubli is used so infrequently.

Soro-soro is not as potent a piscicide as tubli. Both soro-soro leaves and its fleshy branches are utilized. Soro-soro is cultivated in Manila and some large towns; Quisumbing believes it is an introduced species.[22]

[21] Quisumbing, op. cit., p. 149 who quotes Wray; tubli is said to be cultivated in Malaya for use as a piscicide.

[22] Ibid., p. 156. Soro-soro is also used as a fish poison by the Igorots.

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Scrapings from the bark of the kasay tree are used as a fish poison. Both soro-soro and kasay are rarely used in Siaton.

The bito-on is a common tree that grows along the seashore in the Philippines. The tree's seeds contain a glucoside, barringtonin; both the bark and the seeds are used as a fish poison.[23] The flesh of bito-on fruits is eaten when ripe, in Siaton; the grated bark is also mixed with binakhao (finely-diced raw fish that many people consider a delicacy). In Caticugan the flesh of the fruit is used also as a piscicide; it is chopped or rubbed against sharp coral rocks in the pools. Sometimes the bito-on flesh is roasted, powdered and mixed with fine ashes or chopped fish. One informant reported an experience with bito-on that is probably typical of its use by many barriofolk.

> One day while my cousin and I were taking a bath in the river he became excited to discover plenty of fish in a deep part of the river. I told him that we could not do anything to catch the fish. But my cousin said we should go home and get some of the fruit and bark of a bito-on tree that grew near his house. We did this and threw it [bito-on fruit] into the water where the fish were swimming. We caught plenty of fish and shrimp and eels.

Not all Caticugan barriofolk, however, knew that bito-on could be used as a piscicide.

Povedano's manuscript (1578) states that the early inhabitants of Negros used two piscicides, tubli

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[23] Ibid., p. 165. Bito-on has been found to be most effective as a piscicide when used at dawn.

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and laktang (i.e., lagtang). Tubli roots were crushed; laktang fruits were roasted and pulverized with dried shrimp. Both Palencia and Capistrano mention Filipinos using tubli as a piscicide.[24] Povedano also wrote that tigao leaves were mixed with those of the lampuyan to make a fish poison.[25] Aguirre reports (1916) that the people of Negros Occidental used lagtang seeds; the roasted seeds were pounded and mixed with algae that stunned but did not kill the fish. Aguirre also mentions the use of tuba (Jatropha curcas Linn.) or kasla, producing a piscicide that killed not merely stupefied the fish.[26] Tuba was introduced into the Philippines from Mexico by the Spaniards; it is now pantropic in distribution. Tuba's English name is "Physic Nut" tree and the seeds contain a toxin called toxalbumin curcin.[27]

[24]Teofilo Panencia "The Life of a Bisaya Fisherman," Manila, Bisaya Ethnology, I-V, Beyer Collection, 1918, p. 4. Typescript. Vide Capistrano, op. cit., p. 10.

[25]Probably Povedano's lampuyan is lampuyang (Curcuma longa Linn.) that is a source of tumeric. However, the lampuyang that grows in Caticugan, identified by a specimen, is Curcuma zedoaria (Berg.) Rosc.; Brown makes no mention of it being used as a fish poison. Povedano's tigao is probably tigau (Callicarpa cana Linn.), a shrub whose leaves are used as a piscicide, according to Brown. Neither of these two plants, lampuyang or tigau, were used as fish poisons in Caticugan. Brown, op. cit., I, pp. 425-8 and Brown, op. cit., III, p. 277.

[26]Eulogio Aguirre "How the Early People in Occidental Negros Obtained Their Food." Manila, Bisaya Ethnology, Beyer Collection, I-V, 1918, pp. 3-4. Typescript. Magahats use tuba as a fish poison, soaking the pounded fruits in a container of water and then pouring the mixture into the river or creek. It is reported the toxin takes about 20 minutes to stupefy the fish. Magahats also use tubli and lagtang. Oracion, op. cit., pp. 77-8.

[27]Eduardo Quisumbing "Philippine Plants Used for Arrow Poisons," The Philippine Journal of Science, LXXVII, No. 2 (June 1947), pp. 137-8. In Caticugan there is also a plant called tuba-tuba (Jatropha gossypifolia Linn.)

GALOBOG

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Galobog ("to make the water muddy") is another method of fishing practiced in Caticugan. Part of Caticugan creek is fairly wide and flows sluggishly. The people tie branches to several carabaos and have them drag the branches in the creek, which makes the water muddy. The shrimp (olang) scurry to the water level at the creek bank edges where they are caught. For the most part, this method serves to collect shrimp, although a few small fish are sometimes caught. Often a small net is used, but generally the people pick up the shrimp with their hands. In Barrio Caticugan galobog is done every two or three months. In one galobog about twenty people participated--men, women and children--and each person kept the shrimp collected. No one got less than half a coconut shell of shrimp; some gathered more.[28]

PANANGKOP

Panangkop is another method of obtaining small fish, shrimp and crabs from the Siaton River. Small piles of stones (tapok), two to three feet high, are made along the river banks in the shallow water. The stone piles line the river from the seashore to Casala-an.

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[28] Galobog is similar to the palubog method of obtaining fish in Cagayan, Mindanao. The people muddy the water of a pool, killing large fish with sticks and netting smaller ones. Capistrano, op. cit., p. 9.

20: Hart E-5 (195.) 1954 OA1 Philippines
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Dead palm fronds often are put on top of the stone piles to increase the shade; fish, shrimp and crabs soon make their homes here. Every week or so, sometimes more frequently, a net (tangkop) is used to catch the fish living in the stone piles. 226.

The tangkop net is made of abaca with small wooden floats at the top to keep it afloat. A long funnel-like sleeve (paboto) is attached to the center portion of the net. The net is placed around the stone pile and the bottom weighted to the bed with stones; then the stones are removed, one by one, and piled outside the net. Gradually the bottom of the net is drawn together as the stones are replaced. When all the rocks from the pile are removed, the bottom edges of the net are completely drawn together. Most of the fish caught inside the net try to escape into the paboto. The catch usually consists of small shrimp, crabs, and Mambot, Ilabo, Bais and sometimes Halo-an. For example, from six stone piles one man caught a 6-inch bais (eel), and filled a pint-sized bamboo container with small fish, shrimp and crabs.

Anyone can build a stone pile for panangkop "as long as there is room." However, some families in Caticugan have maintained the same location for a number of years. During the rainy season river floods either swept away the stone piles or covered them. Panangkop is normally a man's job, although small girls sometimes assist their fathers and brothers.

(See Plate XL. Figure B was seen in Pangasinan province, Luzon.)[1] Pana sa isda are usually from five to ten 227
inches long, the arrows from fifteen to twenty inches; posil-posil sa isda may be from one and one-half to five feet in length whereas the arrows are from twenty to forty inches long. I shot a posil-posil sa isda that hurled a 40-inch arrow 20 feet, penetrating half way through a medium-sized banana trunk. Often a posil-posil sa isda may have as many as four to six rubber bands to increase the arrow's velocity; some will shoot an arrow 150 feet, although after the first twenty or thirty feet the flight is not straight.

The posil-posil sa isda is used more for "shooting" 226 ●
larger fish in the sea; the pana sa isda is for river fishing. Most boys, as young as seven or eight years, 462
have a pana sa isda that they use with considerable skill. Women never and young girls rarely "shoot" fish, either in the river or the sea. Young boys go to the river wearing home-made goggles and stand for hours in the water, now and then ducking their heads beneath the surface to look for small fish. The goggles are made of wood with pieces of broken glass for lenses. The glass is sometimes affixed to the handcarved wooden frames with the wax of wild honeycomb. Usually a boy wears a bamboo container at his waist for catch.

Morning or afternoon, one might see two or three small boys, standing in the river, with their heads popping in and out of the water. Sometimes they stayed

1 [See p. 562, cat. 227 -- Analyst]

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in the water so long that they shivered from the cold. The arrow rarely completely leaves the gun. Many small fish hide under stones; the boys gently lift the stones and shoot the fish as they dart away. Some young lads said "the fish just stick their heads out from the stones and we shoot them."

The best places to hunt fish are where the water runs noisily over shallow stony stretches. Larger boys swim under water along the river banks where the water is deep and trees shade the pools. Here they find larger fish. Varieties most frequently shot are Halo-an, Gisao, Pigot, Managat and Ilabo. One man caught a Managat 3 feet long but this admittedly was exceptional. A "large" Siaton River fish rarely is longer than eight or ten

River fish also are caught by hook and lin (called palagdas), and with a fish spear (togsad) and gaff (kao-it); the latter is used mainly to catch eels. Halo-an often are caught with a home-made hook (taga), line and bamboo fishing pole (pamingwit). Along the east side of the Siaton River, in Barrio Datag, a few pools exist that refill each year when the river overflows. There are often a few Halo-an in these pools. Sometimes small fish, earthworm, or cricket is used as bait; the pole may be left with its butt pushed into the sand. The owner returns later to inspect his line. I never saw a woman fish with a hook and line. Fewer

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fish are caught by hook and line than by other methods since most of the river fish are small.

Eels are caught in the Siaton River; my assistant caught an eel as thick as his forearm. A hook baited with a Tibiw or a small frog is thrown into the river, and the line is tied to a stump or tree. Another method of catching eels is called pangao-it. A young man dives into a deep hole, usually near the bank, locates a large eel. The diver gently pets the eel until he is able to gaff it with the kao-it; they say the eel remains motionless while its back is being rubbed. The togsad (see Plate XLI)[1] of which only one was seen in Caticugan, is a spear with a number of barbs attached to the tip. It is used mainly to spear small fish--sometimes at night with the aid of a torch. I saw only one togsad in Caticugan.

FRESH-WATER SHRIMP AND CRABS

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These crustaceans occur in the river all year although they are easier to catch during the dry season. Table XXX[2] gives local and identification names.

1 [See p. 565, cat. 116 -- Analyst]

2 [See p. 566, cat. 226 -- Analyst]

TABLE XXX

Shrimp and Crabs Caught in the Siaton River[29]

Local Names		Identification
Caticugan	Tanjay	
SHRIMP		
Analsalon	Mangoyod	Palaemon lanceifrous (?)
Magus	Mayes	Atya serrata Spence Bate
Naturale	Mistersa	Caranx malabaricus Bloch and Schneider
Olang	-	Macrobrachium australe (Guerin-Meneville)
CRABS		
Kalampay	-	Varuna litterata (Fabricius)
Katang	-	Pseudograpsus crassus A. Milne Edwards
Tolo	-	Varuna spinicarpa (Ortmann) and Ptychognathus riedelii A. Milne Edwards

Concerning the Olang Dr. Chace writes:

This species ranges from Madagascar to Oceania and is widespread over this area, although it has apparently not previously been recorded from the Philippines. It is always somewhat dangerous to assign a definite specific name to a single female of this genus, inasmuch as most of the diagnostic characters are found only in males. However, this specimen appears to fit the description of M. australe fairly well and there is no reason to believe that such a widespread species should not be found in the Philippines.

In regard to the Katang crab, Dr. Chace reports:

This species has been recorded from fresh water in the Celebes, Flores, Halmahera, Ceram, and possibly Japan. It has also been found on coral reefs of the Talaud Islands...and it has not been recorded in the literature from the Philippines... Your remarks on the migration of this species to and from the sea are very interesting. I am quite

[29]Identification made from specimens I furnished the Bureau of Fisheries, Manila, and the Division of Marine Invertebrates, Smithsonian Institution.

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sure that no such observations have been made previously regarding this species. Such a migration readily explains the presence of the Talaud specimens in a marine habitat.

Dr. Chace wrote concerning the Tolo crab:

> This species has been recorded in the literature from Celebes, Flores, Ceram, northern Sumatra, and the Andamans. There are specimens in our collection from Uki Island in the Dutch East Indies and the Baganga River, Mindanao. I do not believe that this species has been recorded in the literature from the Philippines.[30]

Shrimp

The reddish-black Analsalon is the smallest of the four types of shrimp in the river and creeks. The blackish Magus has an indistinct white stripe on its back; the female is said to have no pincers. The Naturale, a whitish-grey shrimp, is not found as frequently as other types in Caticugan Creek. Shrimp are frequently boiled with vegetables to give a better flavor.

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The shrimp caught are small, from one to three inches. However, during the rainy season in the river and creeks near Caticugan shrimp are caught from four to six inches long. The people say these bigger shrimp are washed down from the upper reaches of the Siaton River and its tributaries by the swift currents of the rainy season. I have seen shrimp from eight to nine inches long that had been caught in creeks near Balanan.

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[30] Personal communications to the writer from Dr. Fenner A. Chace, Jr., April 15 and November 6, 1952.

Crabs

When the brown shrike begins to sing in September or October the Katang, Kalampay and Tolo crabs are said to begin their migration down river. The crabs spawn at the mouth of the river; they begin late in September and continue until early in November. October is the chief month of migration for these crabs.

The mature Katang and Kalampay are about the same size; the Tolo is smaller. A mature Katang is as large as the back of one's hand; a Tolo rarely grows larger than a fifty-cent coin. The Katang receives its name from a C-like mark on its back. When Katang and Kalampay migrate the barriofolk turn out in force to obtain them with traps, nets and by hand. Some young men stand in the river and feel with their feet for the crabs on the bottom. When a crab is felt (or bites their foot) they duck under the surface to grab it. Female Katang are prized because they carry good-sized bunches of orange-colored eggs; the male Katang, however, has large pincers and more meat than the female.

In December or January the Katang young (Lavagay) begin their migration upstream. They move by thousands along the river edges, over the stones in the shallow water, marching like well-drilled cadets. The barriofolk catch the Lavagay, sometimes with blankets, then pound and salt them to make a variety of ginamos. Some people

say Lavagay that escape will not return to the sea for seven years. 226

The Tolo crab is usually found around rocks in shallow water; more live in the river than in Caticugan Creek. They are caught in the balantak, ta-an and asag along with the Hipon, shrimp and fish. 226 136

The Alimango is a large crab, growing to the size of a small coconut, that lives in nipa and mangrove swamps or in the tidal reaches of the river. They are caught by digging them from their holes in the sand or mud. Another method is to put a fish trap baited with chicken guts or fish in the swamp. One man living in Baybay caught eight good-sized Alimangos in two days with such a baited trap.

River fish, shrimp and crabs form a considerable part of the aquatic food. Caticugan barriofolk eat more aquatic food from the river and creek than from the sea. As one travels to barrios farther from the sea, the importance of the sea as a source of food diminishes. The sea food eaten in Casala-an, for example, consists mainly of dried fish or canned sardines bought in the poblacion. Caticugan people do not prefer river to marine aquatic food; they often lack money to buy sea fish in the marketplace. During the rainy season the supply is often inadequate for the demand, whereas prices are higher. Although the people of Caticugan live only a mile from the sea they lack the necessary equipment to 226 262 433 435 226 471

catch fish in the sea and the money necessary to construct a fish corral.

PELAGIC FISHING: INTRODUCTION

The South Mindanao Sea is considered one of the richest fishing grounds in the Philippines, according to Dr. Villadolid, Director, Bureau of Fisheries. This section describes the methods of catching fish, types caught, and commercial aspects of pelagic fishing. In the past, cattle was the "big business" of Siaton municipality. Today, with the depletion of the herds during the last war, the fish corral has become the municipality's "big business."[31]

Four major methods of catching sea fish are used in Siaton municipality. First, the bonsod or bongsod (fish corral); second, various types of twine or abaca nets; third, the bobo fish trap; and fourth, hook and line fishing from small boats. As has been noted previously, piscicides cannot be considered a major method of catching pelagic fish in Siaton.

[31] I did not live in a fishing barrio. However, I spent a great deal of time in Baybay and Malabuhan, often staying in the villages for several days at the time, observing and talking with the residents. Most commercial fishermen lived in the poblacion. Mr. Francisco Baldebrin, vice mayor of the municipality, was one of my most intelligent and willing informants; he managed several fish corrals off Baybay. Other fishermen such as Mr. Pedro Solde and Carding Alonzo, Malabuhan, spent a great deal of time with me, showing me their equipment and explaining their work. For comparative data on Philippine fish traps, types of nets, etc., vide Agustin F. Umali, Guide to the Classification of Fishing Gear in the Philippines. Research Report 17. Washington, D. C., Fish and Wildlife Service, United States Department of the Interior, Government Printing Office, 1950.

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produced in the Philippines. This type of land use is most common along the northern coast of Panay and the Cavite and Pampangan sections of Manila Bay. In Negros Oriental there are several hundreds of acres of fishponds south of Tanjay whereas other ponds are found in Manjuyod and between Guihulngan and Vallehermoso. There were no fish ponds in Siaton municipality.

The Bonsod (Fish Corral)

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Bonsods are a pre-Hispanic method of catching fish. Antonio de Morga describes a type of fish corral used by Filipinos living near Manila in the 17th century.

> The natives' [Filipinos'] method of catching them [fish] is by making corrals of bejucos, which are certain slender canes or rushes, solid and very pliant and strong; these are employed for making cables for the natives' boats, as well as other kinds of ropes. They catch the fish inside these corrals, having made the enclosures fast by means of stakes. They also catch the fish in wicker baskets made from the bejucos, but most generally with atarrayas [a type of fish net], esparaveles [a round fish net that is jerked along in shallow water], and other small barrederas, [a net with a tighter mesh than the usual type] and with hand lines and hooks...[36]

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[14]

Retana, who published an annotated edition of de Morga, speculates that the bonsod originally came from Borneo.

Fish corral varieties in the Philippines have yet to be thoroughly studied and classified. They vary in size and design, from small shallow-water corrals to

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[36] Antonio de Morga, Blair and Robertson, op. cit., XVI, p. 96. Povedano, writing in 1572, mentions the fish corrals of the people of Negros. E. D. Hester (ed.) The Robertson Text and Translation of the Povedano Manuscript of 1572. Transcript No. 2. Chicago, Philippine Sutides Program, Department of Anthropology, University of Chicago, 1954, p. 48. Mimeographed. Unfortunately, this translation was not completed in time for me to use it throughout my report.

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those built in deep water where large nets and boats are needed to get the catch. Plate XLII[1] presents sketches of fish corral types found in Luzon, Cebu and Negros Oriental. The Quingavite is built in depths thirty to sixty-five feet deep while the Boholano, Pangalato, and Natural are shallow water fish corrals constructed in water six to twelve feet deep. Umali writes that the shallow water fish corrals cost from $50 to $150 to build whereas deep-water fish corrals are more expensive. These costs, however, are pre-war and are greater today.[37]

Victoria stated that in 1928 the baclad (Tagalog for fish corral) was the most important method of fishing in Cebu. He wrote that some large fish corrals required as much as $3,000 to build; smaller ones cost from $250 to $1,000.[38] As Umali reported "enormous sums of money are invested annually" in Philippine fish corrals.[39]

There appears to be two basic types of Philippine fish corrals. First, the large deep-water variety where the catch is obtained with boats and large nets, taking considerable capital to construct. Second, the smaller shallow-water variety, built in wading depths along the beaches or rivers, where the catch is collected with small hand nets.

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[37]Agustin F. Umali "The Fishing Industries of Ragay Gulf [Luzon]" The Philippine Journal of Science, Manila, LXV, No. 3 (March, 1938), pp. 189-91.

[38]Soledad De la Victoria "The Fishing Industry in Cebu (October 1928)." Manila, Philippine Customary Law, X, Beyer Collection, 1931, pp. 44-5. Typescript.

[39]Umali, op. cit., p. 189.

1 [See p. 575, cat. 226 -- Analyst]

PLATE XLII
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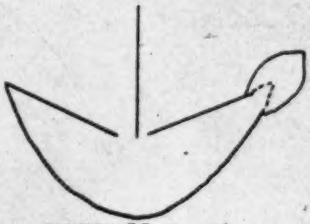


QUINAVITE (Luzon)

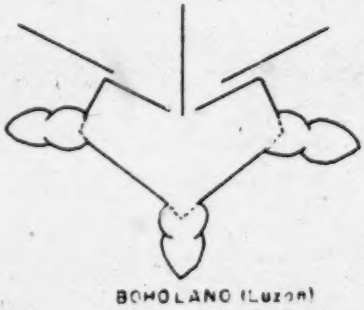
BACLAD (Cebu)

PANGALATO
(Luzon)

LEYTE (Tanjay)

NATURAL or ORDINARIO

BINATURAL (Tanjay)



BOHOLANO (Luzon)

VARIETIES OF FISH
CORRALS
PHILIPPINES

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Plate XL
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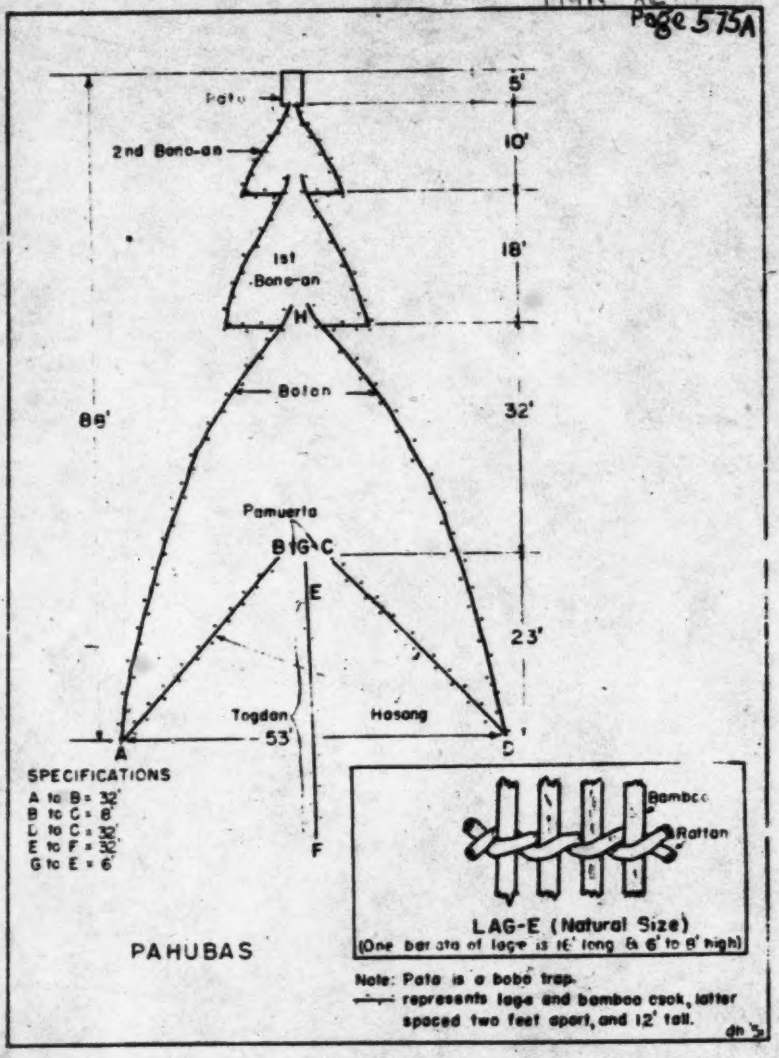

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These two types of fish corrals, Leyte and Binatural, are found in Tanjay. (See Plate XLII.)[1] The Leyte fish corral is quite similar to the Siaton bonsod; the former is said to have been introduced to Tanjay by Leyte fishermen. The Leyte fish corral is built in depths thirty to sixty-five feet deep; whereas the Binatural is constructed in shallow waters; as a result the Binatural catches smaller fish. Two similar types of fish corrals are built in Siaton, the large bonsod, similar to the Quinavite and Leyte, and the smaller, shallow-water pahubas that resembles the Binatural and Natural. Siaton pahubas have a small trap, like the bobo, at the exit of the last section of the corral. (See Plate XLIII.)[2]

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Fish corral and bobo activities in Siaton are keyed to the monsoons. The southwest monsoon brings winds and rough seas that destroy the bonsods and make it difficult to lay or retrieve the bobo. Each year the bonsods are rebuilt and each year the southwest monsoon wrecks them, usually in July or August. Sometimes a typhoon sweeps across southern Negros, as in 1951 and 1952, destroying the bonsods earlier than usual. In 1951 all Siaton bonsods except one were destroyed by an early May typhoon; in 1952 the fish corrals were ruined by an early June typhoon. For this reason pelagic fish are less plentiful in Siaton during most of the rainy season.

1 [See p.575, cat. 226 -- Analyst]

2 [See p.575A, cat. 226 -- Analyst]

₱275 in Ragay Gulf. These figures illustrate the inflation that has occurred in the Philippines since 1938.

Table XXXIV, at the end of this chapter, lists the local, English and scientific names (whenever possible) of fish caught in Siaton bonsods; Table XXXV gives the frequency of their catch and class accorded them by people living in both the barrio and Siaton poblacion.[1]

Construction of the Fish Corral

Construction of bonsods in Siaton begins in late October or early November. Bonsods are built, for the most part, between Malabuhan and Salag Point; few bonsods are erected west of Salag Point because the coral sea floor makes it almost impossible to embed the posts. (See Plates XLIV and XLV.) In the past the long bamboos needed to build a bonsod could be cut in Caticugan and other barrios near the sea. Today bamboo is cut in Lamtoc, Balanan, and Casala-an and floated as rafts down the river since nearby bamboo resources have been exhausted. Some fish corral owners advance to the cutters in the barrios part of the money to be paid for the bamboo with full payment made on delivery. Long thick poles usually cost about twenty cents each; in Tanjay similar bamboos are reported to bring twice this amount.

Most of the rattan obtained to build the bonsods comes from Tolong municipality. The people said that once rattan grew abundantly in the hills near Caticugan;

[1] [see pp. 640-645 -- Analyst]

[2] [See pp. 586A and B, cat. 116 -- Analyst]

prices vary according to size and quality. Needed supplies as wire and rope normally are purchased in Dumaguete. 226 458

Plate XLVI[1] illustrates the general shape and size of the typical Siaton bonsod. Bamboo poles (osok) used to make the bonsod walls (bolon and paniko) are sharpened at one end with a large bolo or saw; a small slit is made in the internodes of the bamboo that will be submerged. These slits permit water and sand to enter the bamboos making them heavier and easier to push into the sea floor. Usually a number of these internodes at the ends of the poles are filled with sand for the same purpose. A chisel (gobia) is used to make the slits. 226 335

From 120 to 130 bamboos are used to make the banata or matting of the bonsod. (See Plate XVLII)[2] Each section of the banata is from 78 to 84 feet long and about 20 feet wide. The bamboo splints (lag-e) that are woven together to make the banata are one-half inch wide. Sometimes the banata is called lag-e although, technically, the lag-e are the long bamboo splints of the banata. For the typical Siaton bonsod fourteen banatas are used. The banata enclose the bonsod to prevent the escape of the fish caught inside the corral.

Bamboo poles are split by the golayan. A long bamboo is split for a few feet at the end and a small piece of bamboo is jammed into the split end. The pole is placed on a raised platform consisting of two horizontal crossbars supported by two uprights. Two vertical bamboos are attached to the horizontal crossbars making

1 [See p. 589, cat. 226 or 335 -- Analyst]
2 [See p. 590, cat. 226 or 335 -- Analyst]

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Plate XLVI
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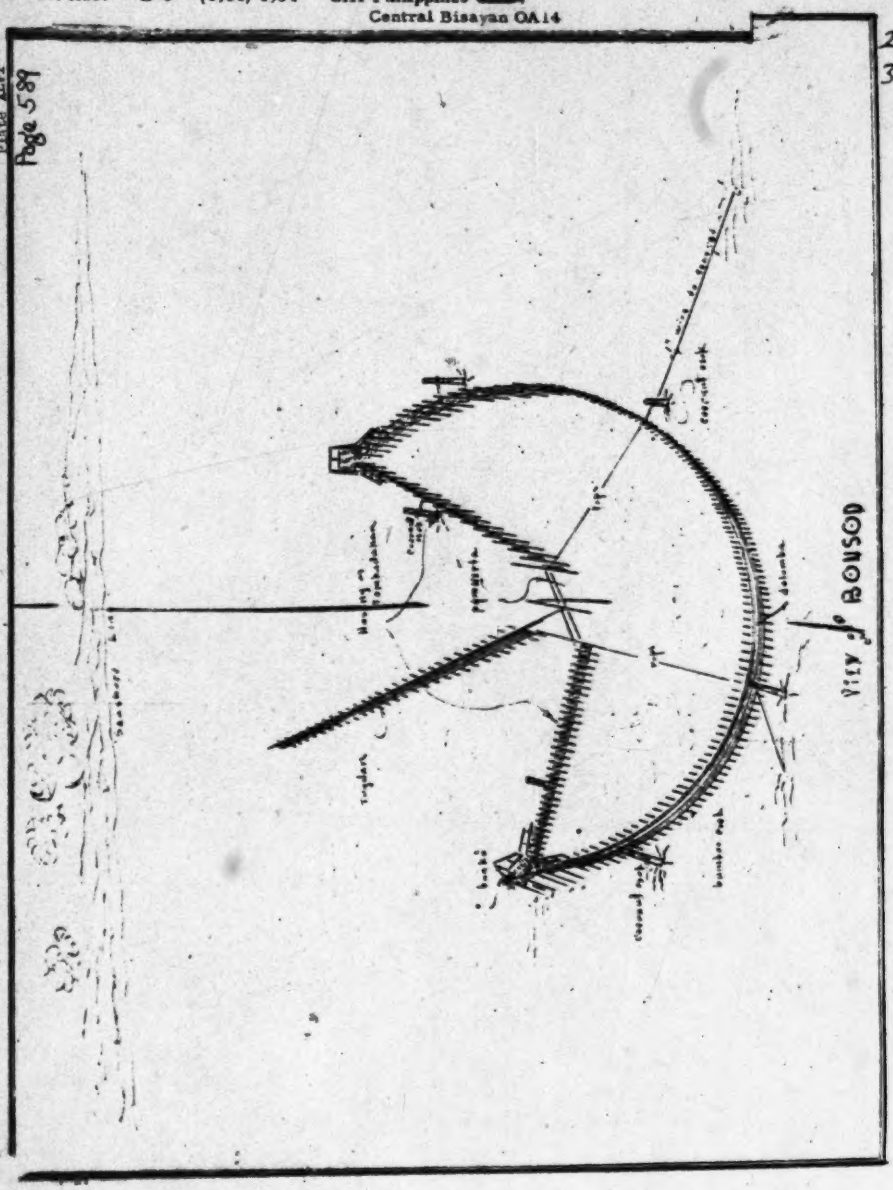

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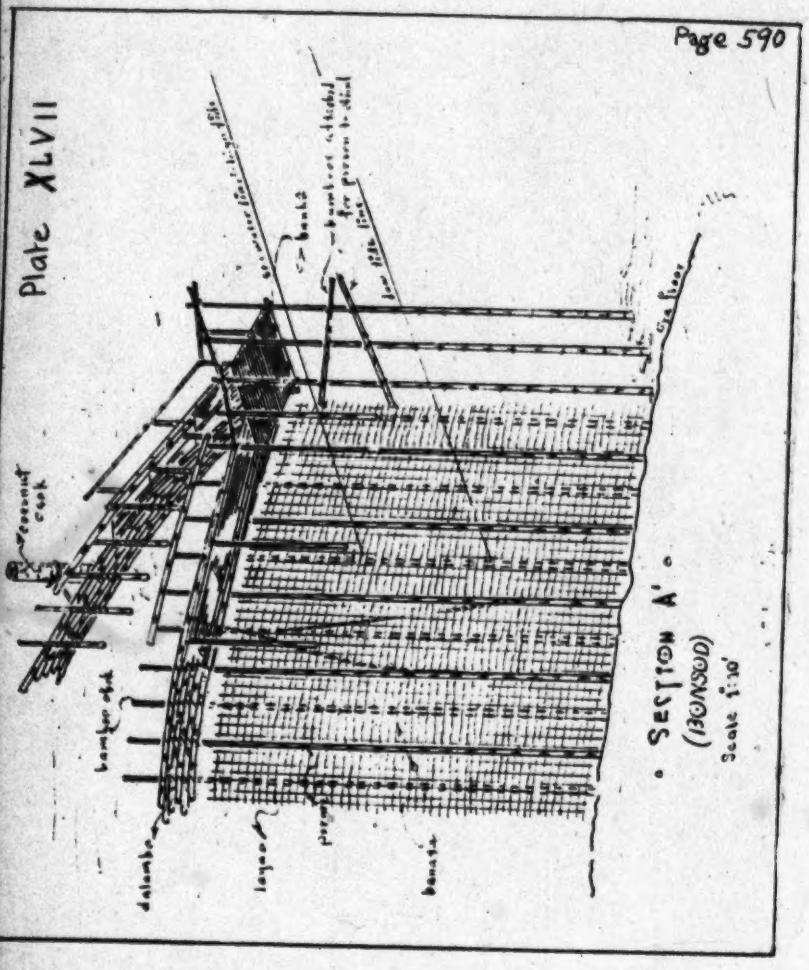
Plate XLVII



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a small square entrance. The ends of the stick in the split end of the bamboo are forced against these two vertical bamboos and the pole is pushed through the entrance. Since the stick in the split end of the bamboo cannot pass through the entrance it splits the bamboo down its entire length. The end of the bamboo, as it is being pushed, is "threaded" through a large rattan ring beyond the entrance of the golayan so the two bamboo splints (golay) will not spring outward during the process. Usually one man guides the bamboo through the rattan ring whereas another pushes; a 70-foot bamboo can be split within a few minutes. The golay are then split into thinner splints with a bolo and become the lag-e.

There are certain times deemed best to start the banata weaving. Workers of one bonsod constructor started their banata on Sunday "because the church is full and the bonsod will have good luck, catching many fish." The men worked only a short period on the banata; the idea was to start the banata on Sunday, not to finish it. Older men are said to believe it is wise "to end the banata at one's heart so one can feel when fish are inside the bonsod." Others say the banata should be ended "at one's mouth so one can always eat what one catches inside the bonsod." Some fishermen believe it is best to begin the weaving of the banata on either a Wednesday or Saturday with a full moon.

Lag-e splints are placed on the ground about 4 inches apart; they are woven into a banata with rattan

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lashings by open twining. Each row of open twining is separated from the other by about 6 inches. Sig-id vine is used more frequently than rattan in Tanjay because of the scarcity of the latter. In Siaton builders said sig-id vine is not as strong as rattan and, for this reason, rarely use it in constructing their bonsods. If the materials have been prepared previously, an individual can weave one banata section in a day. When the individual banatas are finished they are rolled, placed on the raft, and floated to the fish corral site.

When the bonsod construction begins, a raft (balsa) is built from fifty or sixty bamboos. Sharpened bamboo osoks are loaded on the raft that is poled to the site. Often osoks remain from the last fish corral that furnish builders with the bonsod outline. If not, the first osok is sunk in the center of the entrance to the bonsod pamuerta ("gate"); the gate is usually thirty to thirty-five feet wide and is where the fish enter the bonsod. Then two osoks are pushed into the seafloor on each side of the center one, about 15 feet to the left and to the right. Three or four men move the osok back and forth, gradually pushing it into the bottom.

Once the three pamuerta osoks are embedded, if the bonsod is being built on a new site or no poles remain from the previous fish corral, the balangsan ("ruler") is used to get the proper crescentric shape of the bonsod. The balangsan is a bamboo about fifty

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feet long; a large stone is tied to each end so it will sink. A rope is then tied to the balangsan's center so the workers may move the submerged bamboo. From the center entrance bamboo (see Plate XLVIII, E)[1] another bamboo is sunk at the end of the togdan. Using this pole and the pamuerta bamboo a straight line 85 feet long is made seaward; at the terminus another pole is sunk. (See Plate XLVIII, F.)[1] The rope tied to the balangsan is fixed to the center pamuerta pole; an arc is gradually made either way from the bolon, the fish corral's center section. It is impossible to see the submerged balangsan, but the men can feel when a pole, being pushed downward, bumps against the balangsan. As they move either way, in making the panikos, they reduce the length of the rope tied to the balangsan; by this method the bonsod's crescentric shape is achieved.

The hasang (or tombadahan) walls of the bonsod are called "gills." (See Plate XLVIII, A to B and C to D.)[1] Once the poles are embedded, the dalamba is added--a row of five to seven bamboos to which the osoks are lashed. (See Plate XLVIII, View of Lag-o.)[1] However, until the banata are installed, only every other pole is tied to the dalamba; otherwise the banata could not be placed alternately between the poles. Bamboo poles on the outside of the banata are called perme; those on the inside are known as layao. Normally from 300 to 350 poles are used to make the bolon, panikos, and hasang.

1 [See p.593A, cat. 226 or 335 -- Analyst]

Plate XLVIII

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Some builders use more bamboo to make the fish corral walls stronger.

The togdan is usually from 150 to 200 feet long; the bamboos are firmly fixed to the dalamba. The togdan guides the fish into the bonsod; once inside the fish rarely escape through the open entrance by which they entered. The togdan does not have a banata for the bamboos are close enough to guide the fish into the bonsod.

The next step is to make platforms (lantay or banko) at the ends of the bonsod. (See Plates XLVI and XLVII.[1] These platforms are where the men stand when they net the catch inside the fish corral. Some bonsods (none in Siaton) have a small hut on one of the platforms where a man stays at night to watch and call the workers if a school of fish enters. In Siaton the practice is to send a man in a boat to see if the bonsod caught any fish during the night.

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The final step is the installation of the banata; this process normally calls for a ladlad. To install the banata more men are needed for one day than employed to construct the fish corral. A ladlad is a traditional feast given by the builder mainly to attract volunteer workers to help install the banata. Table XXXVI[2] presents a breakdown of the cost of one ladlad given when the banata was installed in a bonsod off Sitio Baybay.

1 [See pp. 589, 590, cat. 226 or 335 -- Analyst]

2 [See p. 595, cat. 226 or 476 -- Analyst]

TABLE XXXVI

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Ladlad Expenses, Sitio Baybay, 1951

Food Items	Cost (Dollars)
Small pig	$12.50
Tahores (beans)	.30
Spices (for pig)	.20
Cornmeal	3.75
Bread	.40
Guhang	2.00
	$19.15

This ladlad attracted only three volunteer workers and the host invited friends from the poblacion whom he did not expect to help with the banata's installation. I asked him if it would not have been cheaper to have paid wages to the three volunteer workers than to have held a ladlad. He replied: "Oh, yes. But the ladlad is traditional"; the prestige gained was adequate compensation to the host. Usually, however, ladlads attract more volunteer laborers and is cheaper than paying for extra workers.[57]

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After eating, the workers put the banata rolls on the raft and float them to the fish corral. A roll is pushed from the raft into the water and slowly maneuvered by swimmers to the proper position alongside the bonsod wall. Several men, standing on the bonsod catwalk, push the banata roll with a pole until it floats vertically,

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[57] In Tanjay the ladlad is called labod. One Tanjay informant said it was necessary to kill the labod pig inside the fish corral; this is not done in Siaton to my knowledge. Some Siaton informants, however, said it was wise to stain the banata with pig blood before they were installed.

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A long pole is inserted into the roll's center as the swimmers unwind it. Gradually the banata is inserted between the perme and layao poles, the latter are not lashed to the dalamba. Once the banata is between the perme and layao bamboos, the layao again are only temporarily lashed. After several days the water-logged banata sinks to the bottom, and another banata is placed above it. When the second row of banata (sugabao) are installed, the layao are lashed permanently to the dalamba. The banata are attached to one another with bamboo "pins" (bulankit). If the banata were fixed to the perme and layao they would be unable to rise and fall with the tide; currents and swells would soon break them.

A few large coconut boles are pushed into the seafloor near the fish corral. (See Plate XLVIII, View of Lag-e.)[1] The dalamba is tied, with wire or rope, to these supports to strengthen the bonsod. These coconut trunks are sometimes made firmer by an anchor embedded in the seafloor and tied to the coconut tree. (See Plate XLVI.)[2]

The wood anchor's crossbar has slits in each internode so it will fill with water and sand and become heavier when submerged. (See Plate XLIX.)[3] An anchor may also be hooked to the dalamba, and the other end of the rope tied to the coconut. The strength and movement of the currents determines the number and positions of these coconut supports and anchors.

1 [See p. 593A, cat. 226 or 335 -- Analyst]
2 [See p. 589, cat. 226 or 335 -- "]
3 [See p. 597, cat. 226 or 335 -- "]

20: Hart E-5 (1951) 1954 OA1 Philippines
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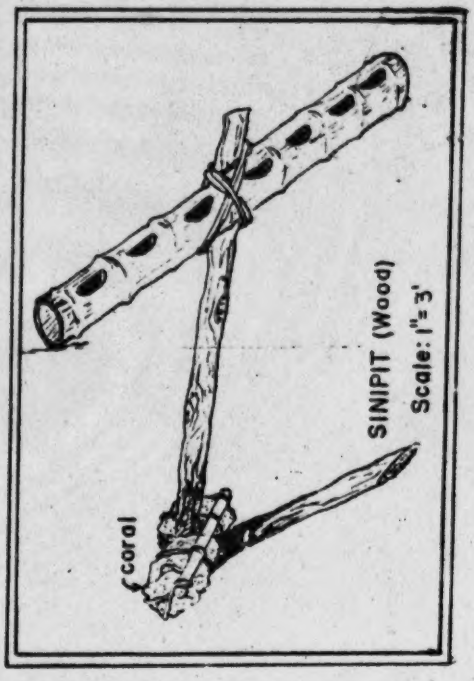
Plate XLIX



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Several Siaton builders said that a bonsod could be built within ten to twelve days, with seven or eight workers, if the materials were prepared. However, the construction of a bonsod usually extends over a longer period since rough seas may delay the work for several days at a time.

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Associated Beliefs of the Bonsod

When the bonsod (or pahubas) is completed a pa-anod is held by many of the owners or builders.[58] A small raft (gakit) is loaded with a roasted or live white chicken and other foods and set adrift in the sea. The food offering is usually made in sevens and includes the same foods previously described for the agricultural ceremonies. Many fishermen believe the fish are owned by sea spirits; by making a pa-anod they will be lucky and catch many fish. The person releasing the little raft may say: "Spirits, here is your share. We hope this is enough. If not, spirits, please excuse us and give us good catches in our bonsod." Some said the raft is set adrift the third night after the completion of the bonsod and when a bobo fish trap is first used. The pa-anod may be done at night since many believe it is unwise to permit strangers to witness the ceremony.

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[58] Pa-anod means "to float away" or "to be carried away by the current." The same ceremony is practiced in Tanjay; some people in Siaton refer to the pa-anod as a diwata.

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One informant described a pa-anod made by his uncle when a new bobo was first submerged in the sea.

> The pa-anod is a sort of lihi for the bobo, bonsod, and other types of fishing. I have seen one, when my uncle put his bobo for the first time into the sea. He made a raft out of a banana trunk and [put on it] a roasted chicken and other food. At the same time the bobo was put into the sea, the raft was also put into the sea and left to be carried away by the current. A pig can be killed and used in this lihi if one can afford it and some bobo owners do. My uncle's bobo caught plenty of fish everytime it was taken to the sea. Maybe the fish have an unseen owner and this owner will be glad if we do this lihi and will allow us to catch plenty of fish.

The Tanjayano who built several pahuba corrals in Siaton held a similar pa-anod. He used a small live white chicken instead of a roasted one. He said:

> If by chance another fisherman finds the raft loaded with things, that fisherman is lucky. He may eat or take all of them to his home. The white chicken will be reared and trained for the cockpit; these chickens always win their fights. The pa-anod is done to please the spirits who own the fish.

I was told of one fisherman who found a live chicken on a pa-anod raft and trained it to fight in the cockpit. He was reported to have won a large sum of money with the chicken that was said to be unusually ferocious.

Many superstitions are connected with the fish corral. One of the most successful bonsod operators has a secret method of determining the month, day and type of moon on which to begin to build his fish corral. However, he would not share his secret with me. The quotation below is from the life history of a poblacion resident; it describes many widespread customs associated with the fish corral in Siaton.

My father had many bonsods, from Malabuhan to Salag. He did not believe in lihis. But if there was a long time in which no fish were caught in his bonsod, then he believed in lihis. Sometimes he would build a raft, this was secret and I never witnessed one of these pa-anods, on which were put seven tostos, seven tilad, seven puso, a roasted white chicken, etc. Then it was let drift away; I never found one. If my father caught a sea turtle in his bonsod he never killed it but engraved his initials on the shell and released it. You know turtles cry tears when they are caught--probably due to a change of environment but my father was not a scientific man. You ask anyone, after a turtle has been caught in a bonsod, no fish will enter for weeks. They would rub the banok and dalamba with tanlad ("lemon grass", a spice used in cooking), to get rid of the turtle odor...

My wife's grandfather, Gregorio, lived near the bonsods and he came to tell my father when fish were inside. For this job my father gave him a baroto [a type of boat] full of fish. Andohao [mackerel] then sold for about two for five centavos. I mended twine net. We did not use abaca net like today but genuine twine net bought from Aguinaldo's [a large store] in Manila. My! how I hated the job of mending net. My father was a disciplinarian. He whipped us if we did not work; yet we were given liberal compensation. We could take fish and sell them and keep the money.

Sometimes I cooked during the construction of the bonsod. Every afternoon after school, Saturdays and Sundays, I had to go to the beach to mend nets or to work. My father used to take bolos to the mountains to barter for bamboos needed to build his bonsod. He could build a bonsod cheaper than any man here...

He did not like anyone to go near the bonsod when they were wearing [hair] pomade and no women. Other fishermen--I don't know if my father believed in this or not--would go to the cemetery at 8 p.m., and get a piece of wood from an exposed coffin or a skull; these were placed in the pamuerta as a charm so the fish would enter the bonsod. They also used a bamboo joint in which there were no holes yet ants and insects lived inside.[59]

[59]Owners will not permit women to go to their bonsods especially those menstruating, for it is believed they will cause the fish corral "to lose its luck."

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One story was told of a man named Jose who found a bamboo section with no visible holes yet contained black ants. Jose loaned the bamboo to a bonsod owner who promised him all the free fish he could eat. Later Jose was asked by the bonsod owner's brother why he was receiving so much free fish. He explained and the owner's brother scolded Jose "in front of many people." As a result Jose took back his bamboo charm; after this incident the bonsod never caught many fish.

Bonsod Financing and Profits

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Various arrangements exist in Siaton for paying bonsod workers and dividing the profits among both workers and partners. One method is to pay the workers wages while building the bonsod and after completion to share with them part of the profits. One bonsod owner shared 10 per cent of the net profits with his helpers. Another bonsod was owned by two partners. Before any division of profits, the cost of constructing the fish corral was deducted. The partner who owned the net received 20 per cent of the net profits; the remainder (80 per cent) was divided in half and shared equally by the two partners (20 per cent each) and their workers (40 per cent among them). Under another arrangement the owner receives two-thirds of the gross sales and his helpers one-third; the cost of the bonsod is not deducted prior to the division of profits. In all cases the bonsod workers are given fish for their families.

Twine nets are repaired with a bamboo shuttle-like device called sikhohan; sikhohan are made in several different sizes. (See Plate L.)[1] In repairing twine nets all loose or "false" threads are cut; "false" threads are those that if unravelled sufficiently are not fixed to an untorn part of the net. New twine is woven into the holes with the sikhohan. Net mending is a man's job, "especially if we cannot go to the sea"; women rarely mend nets.

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Bobo Fish Traps

The bobo, a bamboo fish trap, is widely used in Siaton for obtaining pelagic fish; the trap is distributed throughout the Philippines. Victoria has written of the bobo of Cebu. He states that its fishermen bait the bobo;[68] however, Siaton bobos are not baited. Kangleon reported that Leyte fishermen put bobos in water as deep as 180 feet where they may stay for 3 months.

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[68] De la Victoria, op. cit., p. 46. Umali calls the bobo "a fish pot" and writes that recently they have been made of chicken wire. Umali, op. cit., p. 106.

[1] [this plate is missing -- Analyst]

Kangleon's description of the bobo and its use in Leyte corresponds closely to Siaton practices.[69] More fish are caught in bobos in Siaton than by any other method except the fish corrals and large nets. 226 322

The bobo is made of slender pieces of bamboo, either woven together or lashed with rattan or sig-id. Though all bobos have the same general shape, three different types of weave are found in Siaton: (1) minata; (2) tinap-anan; and (3) tinagik. Minata bobos are woven with bamboo splints whereas tinap-anan and tinagik are tied with rattan or sig-id. (See Plates LI-LIV.)[1]

Bobo sizes vary. If they are too small they are unprofitable; if too large fishermen cannot surface them. The smallest bobo measured was 2 feet 7 inches long, 2 feet 8 inches wide, and 10 inches high, whereas the largest bobo was 12 feet long, 9 feet 8 inches wide, and 4 feet in height. The "hooded mouth" section of the largest bobo was 8 feet high. Most bobos, however, are from 7 to 10 feet in length, 6 to 8 feet in width and 8 to 10 feet in height at the rear.

Bobos are built on two sturdy bamboos; coral is tied to the front and rear of the trap for weight. The entrance passageway tapers off to a narrow opening inside the bobo. Sharpened bamboo sticks protrude from the end of this passage, making it all but impossible for fish inside to escape.

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[69] Ruperto Kangleon, "Fishing in Southern Leyte." Manila, Bisaya Ethnography, I-V, Bisaya Paper No. 104 (1916), Beyer Collection, 1918, p. 4. Typescript.

1 [See p. 613ff, cat. 226 or 322 -- Analyst]

40: Mart E-5 (.95.) 1954 - OA1 Philippines
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Plate II

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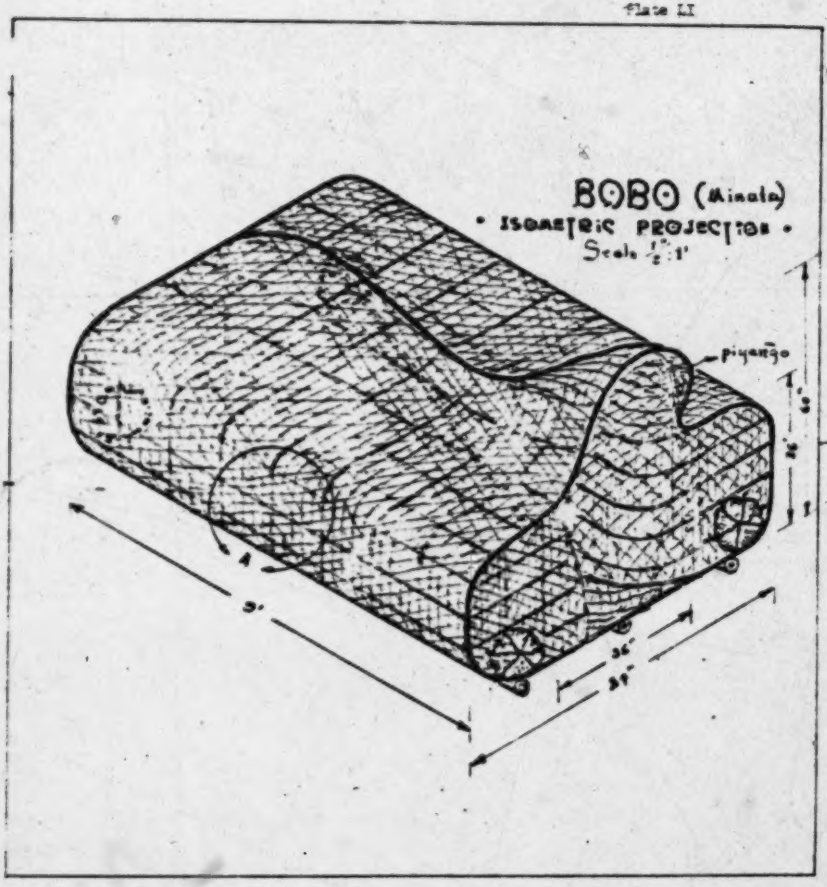

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Plate LII

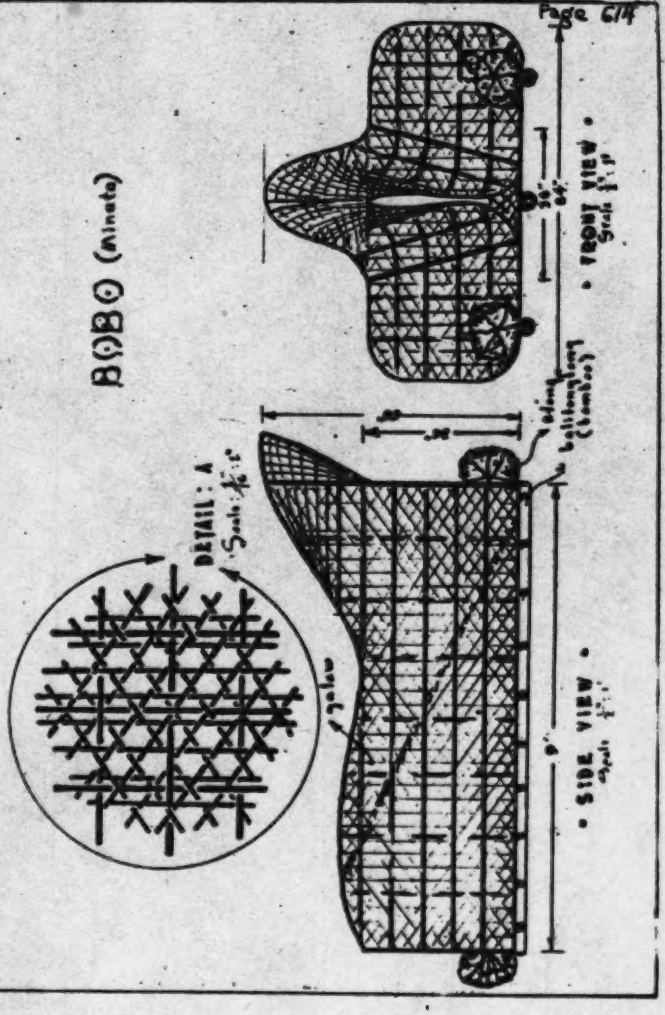

Plate LIII

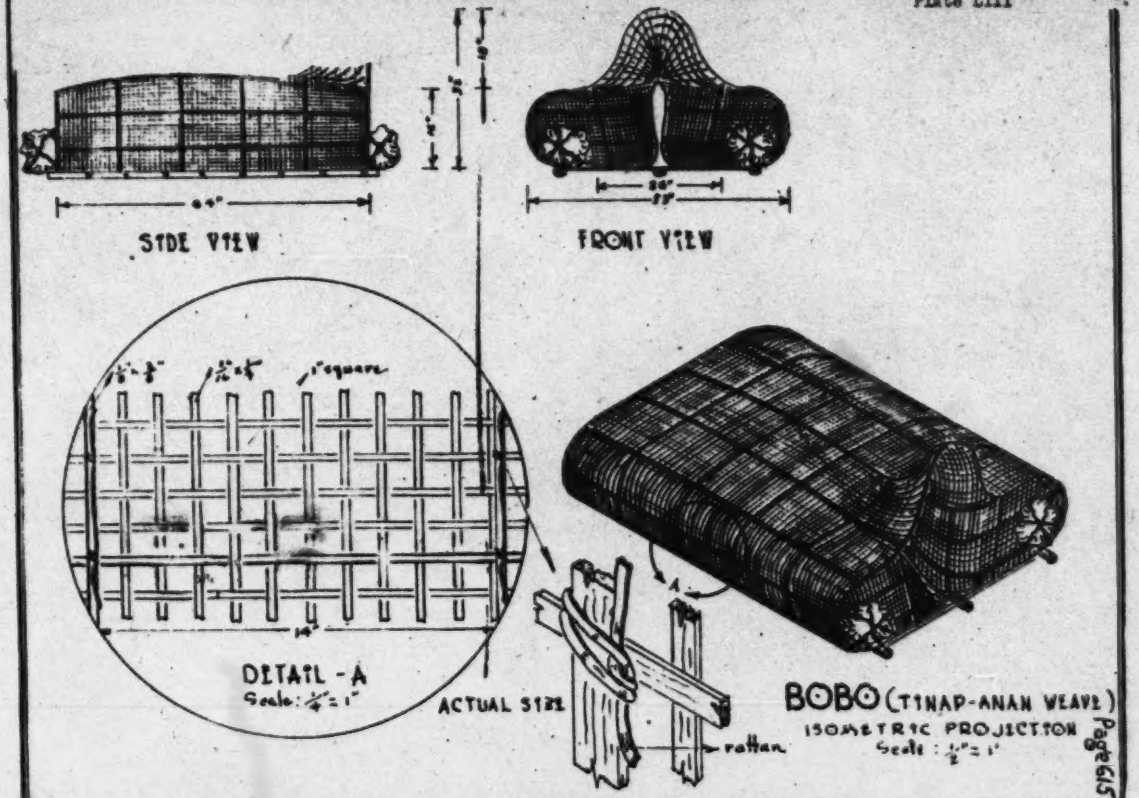

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Plate LIV

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Nearly all of the boats are equipped with a coconut shell or bamboo bailer. One baroto had a hole in the bottom of the hull, from which a wooden plug could be removed to empty the boat of water. Paddles (bogsay) are made from a light, sturdy wood. When boats are beached they usually are covered with palm fronds to protect them from the heat and rain. Some large bancas are kept in palm leaf sheds when not in use.

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A young boy who lives in a seaside barrio becomes adept at handling a baroto; the young girls have less chance to learn. While women may ride as passengers in boats they rarely, if ever, go fishing; almost all aspects of pelagic fishing are masculine. No toy boats or small boats were seen in the fishing barrios for teaching young boys skills necessary when they become adults.

Summary

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Securing aquatic products, from creeks, rivers and sea, consumes more time on the part of the barriofolk than any other activity except agriculture. It is necessary to make traps and nets, keep them in repair, and inspect them for catches. The people of Caticugan, however, depended little upon the sea for aquatic foods although the community is near the coast. When the cost of a fish corral is known, it is apparent that most barriofolk lack the necessary capital for the initial investment in boat, nets, building supplies, etc. Although a bobo trap could be made by most of the Caticugan barriofolk, one reason why so few have bobos is the lack of a boat. No

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one in the barrio owned a boat. One man had a partnership with a resident of a seaside barrio; the former made the bobo, the latter furnished the boat and they shared the catch equally. This was the only such partnership discovered in Caticugan. The barriofolk of Caticugan depend largely on products of the creek and river for their proteins. Data of diet indicate that pelagic products are not common in the daily diet. The small fish, eels, shrimp, crabs and snails obtained from the creek and river compose the bulk of aquatic foods eaten in Caticugan. The importance of this source of food for rural Filipinos has been overlooked almost entirely.[75]

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As with agricultural and food-gathering activities, pre-Hispanic animism appears in aquatic techniques. The ceremonies related to the construction of boats, fish corrals and the rituals connected with the installation of these devices, reflect deep-rooted beliefs in unseen spirits who are the titular owners of sea products. While some poblacion residents who finance fish corrals are sceptical of these concepts, they usually are tolerant of their workers' attitudes. Perhaps these more sophisticated individuals, not thoroughly convinced of the falsity of these beliefs, take the attitude that "most superstitious practices do no harm and may do some good," a Cebuano saying. These attitudes and customs associated with securing

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[75] The Rivera-McMillan report includes several pages of "typical menus of rural households" (Appendix C) that make no mention of fresh-water shrimp or snails. However, one picture is included (p. 162) that shows a small family eating "rice, small shrimp, and snail for supper." The lack of this information in the typical menus may be due to the barriofolk's hesitation to admit eating snails. Rivera-McMillan, op. cit., pp. 212-3.

These attitudes and customs associated with securing aquatic products in Siaton illustrate how Catholicism overlaid the ancient religious concepts. Animism and Catholicism operate in different conceptual frames of reference and barriofolk shift from one to the other without any severe conflict. This situation may explain the relative ease with which the Spanish padres "converted" Filipinos to Catholicism in the past.

The technology of aquatic products, like that of agriculture, also illustrates the sexual division of labor. Some activities are strictly male or female; for a male to participate in women's activities would render him suspect. For example, the only men in Caticugan who were vendors of vegetables, guhang or rice cakes, were individuals known to the barriofolk as bayutes, highly feminine-acting men. There are some activities that either a male or a female may perform as far as the participants' physical strength is concerned, or take into consideration the restricted mobility of most women. The concept of menstrual pollution is another factor; e.g., women should not climb guheng trees (spoil flavor of drink), approach men making boats (the wood might crack), or approach the fish corral (the bonsod's luck might be lost). Age may modify one's role in certain activities. For example, old men may and do help women gather clams and snails at the seashore, an activity in which most young men would not think of participating.

The religious concepts of Caticugan barriofolk are integrated into most aspects of their culture. Religion

TABLE XXVIII

Varieties of Marine Clams and Snails Gathered in Siaton

Local Name	Scientific Name	Frequency Gathered	Location	Clam or Snail
Baliasla	Cafrarium equivoca (Dillwyn)	Infrequently	Beach	Clam
Baloso[76]	Conus muriculatus Sowerby	Infrequently	Beach[85]	Snail
Bogatan[77]	Trachycaridum roguosum (Lamarck)	Infrequently	Beach	Clam
Dahikdahik[78]	Nassarius ? sordidus (A. Ad.)	Infrequently	Beach	Snail
Dalodalo	?	Infrequently	Nipa swamp	Snail
Hagonipa	Neritina zigzac (Gmelin)	Infrequently	Nipa swamp	Snail
Riloghilog[79]	Lunella porphyrites (Gmelin) and Turbo (Marmorostomas) ticaonicus Rve	Infrequently	Beach	Snail
KALAYKAY	Venerupis (Ruditapes) variegata (Sowerby)	FREQUENTLY	Beach	Clam
Kapinan	Cana planulata (Lamarck)	Infrequently	Beach	Clam
Langoli and Tagimtim[80]	?	Infrequently	(86)	Clam
Libodbod[81]	Cerithidea ornata A. Adams	Infrequently	Nipa swamp	Snail
Lagang	Nautilus pompilius Linne	Rarely	Deep sea	Snail
Manilsil	Faunus nitidus (V. D. Busch) and Stenomelania haasula (Lea)[84]	Infrequently	Beach[85]	Snail
Matamata[82]	Thais intermedia (Kiener)	Infrequently	Beach	Snail
Poki	Cypraea tigris Linne	Rarely	Deep sea	Snail
Ponan	Fabia (Trotanea) tristis (Lamarck)	Infrequently	Beach	Clam
Sali-ot	Tridacna noae Roding	Rarely	Deep sea	Clam
Sigay	Erosaria erosa (Linne) and Monetaria annulus (Linne)	Rarely	Beach	Snail
Sihi	Narita undata Linne	Infrequently	Beach[85]	Snail
Tabag sa Dagat	Phinoclavis sinensis (Gmelin)	Infrequently	Beach	Clam
TABONO[83]	Cerithium morus Lamarck	FREQUENTLY	Beach	Snail

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Local Name	Scientific Name	Frequency Gathered	Location	Clam or Snail
Taboysoy	?	Infrequently	Nipa swamp	Snail
Tabong	Mactra (Mactrotoma) depressa/Spengler	Infrequently	Beach[85]	Clam
Talabo	Ostrea glomerata Gould	Infrequently	Beach[86]	Clam
TAPDAGAY	Nerita patula Recluz	FREQUENTLY	Beach[85]	Snail
Torong-torong	(See Bogatan)	Infrequently	Beach	Snail
TOWAY	Caloina papua (Lesson) (?)	FREQUENTLY	Nipa swamp	Clam

[76]Baloso are sometimes called Kibol.

[77]Bogatan are sometimes called Torong-Torong and Litob.

[78]Dahikdahik is sometimes called Darodaro.

[79]Mixture of two different genera although informants identified both as Hiloghilog.

[80]Smaller Langoli are called Tagimtin; they are found attached to the fish corral poles and traps and often are washed ashore.

[81]Lagang are rarely gathered because they are found in the deep water but sometimes they are caught in the fish traps.

[82]Matamata are sometimes called Mata sa Baboy ("Pig's eye").

[83]Large Tabono are called Tapaktapak.

[84]Mixture of species for Stenomelania are more slender, acuminate, and less glossy than the Faunus.

[85]Also found at the mouths of the Siaton and Canaway Rivers within the tidal reaches of the sea.

[86]Larger varieties are obtained by diving in deep water.

20: Hart E-5 (1951) 1954 OAI Philippines
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I obtained a collection of shells from Siquijor Island through the kindness of a fisherman of Enrique Villanueva municipality. With few exceptions the mollusks were gathered at the seashore in the shallow water; Tamboli and Samong were found in the deep water and Tagongon and Dalodalo were collected in nipa swamps. The following identification was made by the Smithsonian Institution, Washington, D. C.

Local Name (Siquijor)	Scientific Name
Tamboli	Cassis cornuta Linne
Tagongon	Telescopium telescopium Linne
Poki	Cypraea tigris Linne
Kahingtong	Ovula ovum Linne
Lisway	Strombus luhuanus Linne
Kibol	Melongena galeodes Lamarck
Samong	Trochus niloticus Linne
Tagmanok	Strombus aurisdianae Linne
Taobtaob	Auricina vespertilio Linne
Lumban	Calcar calcar Linne
Botabota	Angaria distorta Linne
Baloso	Conus ebraeus Linne and Conus nigropunctatus Sowerby
Tuigtuig	Vesica ampulla Linne
"Thorn" of the Sanay	Spine of Slate-pencil sea urchin
Aninikad	Strombus urceus Linne
Bulanbulan	Polinices flemingiana Recluz
Hanlasan	Oliva duclois Reeve
Dalodalo	Terebralia sulcatus Born
Sigay	Monetaria (Ornamentaria) annulus Linne
Tibo-Tibo	Massarius bimaculosa H. Adams
Tabagsoy	Cerithium morus Lamarck and Cerithium cerallinum Dufresne
Corzaon	Corculum cardissa Linne

Cross-comparison between Siquijor and Siaton marine mollusk collection illustrates the need for scientific identification of this type of material due to variations of local names. For example, the Tibo-Tibo of Siaton is a fresh-water snail, whereas the Tibo-Tibo of Siquijor is a completely different mollusk. The Tabono and Tabagsay

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of Siaton and Siquijor are the same mollusk with different names. The Balogo of Siaton and Siquijor are of the same genera but different species, whereas the Sigay of Siaton and Siquijor are entirely different mollusks and the Poki of these two areas are identical. This information regarding the variation of local names for marine mollusks might be considered as evidence, slim as it is, that early settlers of the Siaton area were probably not emigrants from this part of Siquijor Island.